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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.           | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------------|------------------|
| 09/834,950  | 04/16/2001  | Yoshihiko Yano       | 206138US0                     | 5372             |
| 22850   | 7590        | 10/22/2003           |                               |                  |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | EXAMINER<br>THOMPSON, CAMIE S |                  |
|   |             |                      | ART UNIT                      | PAPER NUMBER     |
|   |             |                      | 1774                          | 16               |

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/834,950

Applicant(s)

YANO, YOSHIHIKO

Examiner

Camie S Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed August 12, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6 and 8-17 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 17 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11 and 14-16 is/are allowed.
- 6) ☒ Claim(s) 1,5 and 6 is/are rejected. 9-11 & 14-16
- 7) ☒ Claim(s) 4,8 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

1. Applicant's amendment and accompanying remarks filed August 12, 2003 have been acknowledged.

2. Examiner acknowledges amended claims 1 and 8.

3. Examiner acknowledges newly added claims 9-17.

Newly submitted claims 12 and 17 are directed to an invention tht is independent or distinct from the invention originally claimed for the following: Original claims 1-7 were directed towards a fluorescent thin film. Newly amended claims 12 and 17 are directed toward a process for forming a fluorescent thin film.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 12 and 17 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142 (b) and MPEP 821.03.

4. The rejection of claims 1 and 5-6 under 35 U.S.C. 102(b) as being anticipated by JP 07-122364 has been withdrawn due to applicant's amended claims.

### ***Claim Objections***

5. Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the

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claim(s) in independent form. Claim 13 is dependent upon claim 9. Claim 9 reads only on thioaluminates. Claim 13 reads on neodymium thiogallate and yttrium thioindate.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 56-057877.

The reference discloses a fluorescent material suitable for a color index tube, which is used for flat panel displays as per instant claim 6. The fluorescent material consists of lanthanum thiogallate doped with cerium as per instant claims 1 and 5 (see abstract). The fluorescent material in the reference utilizes a different rare earth element for the matrix material than it does for the luminescent center as per instant claim 1. The reference meets all the limitations of claims 1 and 5-6.

8. Claims 1 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 56-082878.

The Japanese reference discloses a color index tube that comprises lanthanum thiogallate activated with cerium. The fluorescent material described in the Japanese patent uses a different

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rare earth element (La) for the matrix material than it does for the luminescent center (Ce) as per instant claim 1. The reference meets all the limitations of the claims 1 and 5-6.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9-11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harkonen et al., U.S. Patent Number 5,314,759.

Harkonen discloses the use of a phosphor layer in a thin-film electroluminescent display that can have a host material wherein the sulfides of rare earths are used in the aluminate formula (M, Ln)AlO<sub>x</sub> as per instant claims 11 and 16. In the formula represented by Harkonen, M can be zinc; calcium, strontium or barium and Ln can be lanthanum gallium or cerium (see column 5, lines 25-50). Additionally, the reference discloses that the rare earth activator can be cerium or europium as per instant claims 10 and 15 (see column 5, lines 25-30). The Harkonen reference does not specifically disclose that the host material is lanthanum thioaluminate as per instant claims 9 and 14. However, the reference does disclose a host material where a lanthanum thioaluminate can be used. Thioaluminates that contain rare earth sulfides such as La<sub>2</sub>S<sub>3</sub> are suitable materials that do not require solubility in the solid phase (see column 5, lines 36-39). Therefore, it would have been obvious to one of ordinary skill in the art to use lanthanum

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thioaluminate as the matrix material in order to have a material that has chemical and crystallographic compatibility with the activator so as to high efficiency and good stability of emission.

11. Claims 4 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

11. Applicant's arguments with respect to claims 1 and 5-6 have been considered but are moot in view of the new ground(s) of rejection.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (703) 305-4488. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly, can be reached at (703) 308-0449. The fax phone number for the Group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

CYNTHIA H. KELLY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

A handwritten signature in black ink, appearing to read 'Cynthia H. Kelly', is written over the typed name and title.